

Response to Office Action
Dated May 29, 2003

Appln. No. 09/998,961

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November 20, 2003

REMARKS

This is in response to the Office Action dated May 29, 2003. Reconsideration is respectfully requested.

Request for Extension of Time

Applicant hereby requests that the period for response be extended three months, from August 29, 2003 to November 29, 2003, as provided under 37 CFR 1.136. A check in the amount of \$475 is enclosed to cover the extension fee pursuant to 37 CFR 1.17(a)(3).

Allowable Subject Matter

Applicant acknowledges, with appreciation, that Claims 6-9, 11-15 and 17-20 would be allowable if rewritten in independent form to include the recitations of their respective base claims and any intervening claims upon which they depend.

Affirmation of Election and
Traversal of Restriction Requirement

Applicant hereby affirms provisional election with traverse of species (A), drawn to a tube, and sub-species (a), illustrated in Figures 2 and 3, Claims 1-20, 30 and 31 being elected as readable on the elected species and sub-species. Claims 21-29 are withdrawn and will be canceled as required if the Examiner deems the restriction proper in view of applicant's traversal.

Applicant respectfully traverses the restriction and notes that, according to the MPEP, Section 803, there are two criteria for a proper requirement for restriction:

- (1) the inventions must be independent or distinct as claimed; and

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- (2) there must be a serious burden on the Examiner if restriction is required.

Applicant submits that there would not be a serious burden on the Examiner if all pending Claims 1-31 were searched and examined in the same application due to the natural relationship between the various embodiments recited in the claims and disclosed in the application. Efficiencies related to searching may even be realized if at least species A and its subspecies (a), (b) and (c) were considered in the same application. Applicant, therefore, requests that the restriction requirement be withdrawn and all pending claims be examined.

Summary of Claim Rejections

Claims 1-4, 10, 16, 30 and 31 are rejected as anticipated by U.S. Patent No. 6,099,557 to Schmitt. Claim 5 is rejected as obvious over Schmitt in view of U.S. Patent No. 4,892,539 to Koch.

Summary of the Invention

The elected species and subspecies of the invention concerns a graft compatible with living animal tissue and used, for example, to repair a vascular vessel. The graft comprises a thin, flexible, elongated tubular substrate having attachment regions positioned at each end. A plurality of pores extend throughout the attachment regions, the pores being sized to promote growth of the tissue within the pores and thereby across the attachment regions to sealingly attach the substrate to the tissue. In one embodiment, the substrate comprises a plurality of woven filamentary members. The pores are defined by interstices formed between the filamentary members. The filamentary members comprising the attachment regions are woven with fewer filamentary members per unit area than the filamentary members comprising a portion of the

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substrate between the attachment regions. The portion of the substrate between the attachment regions have interstices sized relatively smaller, thereby making the portion between the attachment regions substantially impermeable to fluids.

In another embodiment, the graft comprises an elastic, elongated, tubular, non-woven membrane also having attachment regions positioned at each end. A plurality of pores extend through the membrane across the attachment regions. The pores are sized to promote growth of the tissue within the pores and thereby across the attachment regions to sealingly attach the membrane to the tissue. The membrane is substantially impermeable between the attachment regions.

Amended Claims Allowable

Applicant has amended Claim 1 as suggested by the Examiner by incorporating into it the subject matter of intervening Claims 2-4 and allowable Claim 6, these aforementioned claims being canceled without prejudice. Applicant respectfully contends that Claim 1, as amended, is allowable consistent with the Examiner's remarks and, further, that Claims 5, 7-9, 30 and 31, dependent upon Claim 1, are also allowable for the same reasons that Claim 1 is allowable.

Arguments in Favor of Allowance of Amended Claim 10

Claim 10, as amended, recites a tubular graft formed from a non-woven membrane and having attachment regions at each end. The attachment regions have a plurality of pores that extend through the membrane. The pores are sized to promote growth of tissue within them and thereby across the attachment regions to sealingly attach the membrane to the tissue. The membrane is substantially impermeable between the attachment regions to form a graft capable of conducting fluid, as would be used to repair a blood vessel, for example.

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The structure as recited in amended Claim 10 is not taught or suggested in Schmitt. In contrast, Schmitt discloses a composite graft shown in Figure 2 as having a textile supporting sleeve 2 and a polymer liner 4. The sleeve 2 provides interstices to enhance tissue ingrowth and the liner makes the graft fluid tight (see column 2, lines 50-67). There is, however, no teaching in Schmitt of a liner used as a graft without the textile supporting sleeve as recited in applicant's Claim 10. There is, furthermore, no teaching in Schmitt of a liner having pores that facilitate the ingrowth of tissue. Although Schmitt, at column 2, lines 64 and 65, does teach that expanded polytetrafluoroethylene, used for the liner 4, does have a "microporous" structure, the liner 4 is still impermeable over its entire length, as required to provide fluid integrity to the graft. Thus, Schmitt teaches away from applicant's invention, which has pores through the membrane as recited in Claim 10.

Clearly, Schmitt cannot anticipate amended Claim 10 as this reference does not teach every element of the claim, there being no pores in the liner to facilitate ingrowth of tissue. Neither can Schmitt properly support an obviousness rejection of Claim 10, since there would be no motivation to modify the graft disclosed in Schmitt to have pores in the liner because: (a) the pores are present in the textile support sleeve; and (b) Schmitt teaches that the liner must be fluid tight and, thus, teaches away from a porous liner through which fluid may pass.

Claims 11 and 12-20 depend upon Claim 10, either directly or indirectly, and should be allowable for the same reasons that Claim 10 is allowable over the cited references.

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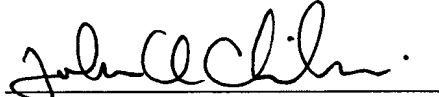
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Summary

Independent Claim 1, as amended, should be allowed consistent with the Examiner's remarks concerning allowable claims. Independent Claim 10 should also be allowed as it is neither anticipated by nor obvious over the cited references. The dependent claims are allowable for the same reasons that the claims on which they depend are allowable. In view of the foregoing arguments, applicant respectfully requests that the claims be allowed and the application passed to issue.

Respectfully submitted,

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Enclosure